

REMARKS

Claims 1-20 are pending herein.

I. The obviousness rejections of claims 1-20 based on Caiger (US 6,145,979) in view of Matsumoto (US 6,523,948), as noted on page 2 of the Office Action.

The USPTO respectfully rejects claims 1-20 under 35 U.S.C. § 103(a) as being unpatentable over Caiger in view of Matsumoto. Claims 1, 8, and 15 are independent claims.

As explained in detail below, it is respectfully asserted that the USPTO has made a technical error in analyzing the Caiger reference, and therefore it is respectfully asserted that claims 1-20 are allowable.

A. The cited references do not teach or suggest that the quantity of ultraviolet rays emitted from the ultraviolet ray source arranged on the most downstream side in the feeding direction of the recording medium, in the plurality of pairs, is set to be larger than the quantity emitted from the other ultraviolet ray irradiating devices, as claimed in claim 1.

Claim 1 claims in relevant part:

“wherein a quantity of the ultraviolet ray emitted from the ultraviolet ray source **arranged on the most downstream side in the feeding direction of the recording medium, in the plurality of pairs**, is set to be larger than that of the ultraviolet rays emitted from the ultraviolet ray source or the ultraviolet ray sources of the other ultraviolet ray irradiating device or each of the other ultraviolet ray irradiating devices.” **(emphasis added)**

Regarding these limitations, it is respectfully not seen where the cited references teach or suggest the claimed structure quoted above.

For example, the USPTO respectfully argues on pages 2-3 of the Office Action that column 4, lines 25-30 of Caiger teaches that “a quantity of the UV ray emitted from the UV ray source arranged on the most downstream side in the feeding direction of recording medium, in the plurality of pairs, is set to be larger than that of UV ray emitting from the UV ray sources of the other UV ray irradiating device.”

However, it is respectfully noted that column 4, lines 25-30 of Caiger teaches that radiation emitting head 51 emits “a higher dose of radiation.” However, it is respectfully

important to note that radiation emitting head 51 of Caiger is not “in the plurality of pairs,” as claimed in claim 1. Instead, as is respectfully clear from Figure 5 of Caiger, radiation emitting head 51 is positioned by itself, and is not paired with a recording head. Thus, radiation emitting head 51 is not the ultraviolet ray source arranged on the most downstream side in the feeding direction of the recording medium, in the plurality of pairs, as claimed in claim 1.

Instead, in Figure 5 of Caiger, radiation source 45 can be an ultraviolet radiation source arranged on the most downstream side in a plurality of pairs. However, Caiger does not teach or suggest at all that radiation source 45 emits a larger quantity of ultraviolet ray than radiation source 43 or radiation source 19. Thus, Caiger respectfully does not teach or suggest that a quantity of the ultraviolet ray emitted from the ultraviolet ray source arranged on the most downstream side in the feeding direction of the recording medium, in the plurality of pairs, is set to be larger than that of the ultraviolet rays emitted from the other ultraviolet ray sources, as claimed in claim 1.

Additionally, it is respectfully asserted that Matsumoto does not overcome this deficiency in Caiger. For example, Matsumoto is only respectfully cited as teaching a line-type recording head, but Matsumoto does not teach or suggest anything about the quantity of ultraviolet ray emitted by the most downstream ultraviolet ray source in the plurality of pairs.

In contrast, present Figures 2 illustrates one possible embodiment of the claimed structure quoted above. As seen in present Figure 2, an image recording section 2 can comprise four pairs, with each pair comprising a recording head 8 and a UV irradiating device 10. According to present Figure 2, the recording medium feeding direction is X, so the most downstream UV irradiating device is the furthest left device, i.e. the one paired with the recording head marked Y.

As explained on pages 18-19 of the present specification, the most downstream irradiating device 11 is configured to emit a larger quantity of UV rays than the other irradiating devices, as claimed in claim 1. This is done, for example, by increasing the number of UV ray sources 11 in the most downstream irradiating device, as explained on page

19 of the present specification. It is respectfully important to note that **the most downstream irradiating device 11 is in the plurality of pairs, as claimed in claim 1.**

The distinction noted above is important and non-trivial because it results in significant inherent advantages over conventional devices. For example, **a device according to claim 1 can be made more miniaturized than conventional devices** (see page 4, lines 19-24 of the present specification). This is because the ultraviolet ray source emitting a higher quantity of ultraviolet ray is positioned as part of the plurality of pairs of read heads and irradiating devices. In contrast, in Caiger for example, the ultraviolet ray source with the higher quantity of rays is provided as a separate additional device apart from the plurality of pairs, which requires a larger and more complicated structure. Therefore, Caiger cannot achieve the same level of miniaturization that is possible with the device of claim 1.

Thus, it is respectfully asserted that the cited references, taken either alone or in combination, do not teach or suggest all of the limitations of independent claim 1. Therefore, it is respectfully asserted that independent claim 1 is also allowable.

B. The cited references do not teach or suggest that the intensity of ultraviolet rays emitted from the ultraviolet ray source arranged on the most downstream side in the feeding direction of the recording medium in the plurality of pairs is set to be larger than the intensity emitted from the other ultraviolet ray irradiating devices, as claimed in claim 8.

Regarding the limitations of claim 8 that claim in relevant part:

“wherein intensity of the ultraviolet ray emitted from the ultraviolet ray source arranged on the most downstream side in the feeding direction of the recording medium, in the plurality of pairs, is set to be larger than that of the ultraviolet rays emitted from the ultraviolet ray source or the ultraviolet ray sources of the other ultraviolet ray irradiating device or each of the other ultraviolet ray irradiating devices,” (emphasis added)

it is respectfully not seen where the cited references teach or suggest the claimed structure quoted above.

As noted above in Part A, **radiation source 51 of Caiger is respectfully not “in the plurality of pairs,”** as claimed in claim 8. Furthermore, it is respectfully asserted that Caiger does not teach or suggest at all that ultraviolet rays emitted from radiation source 45 of Caiger

(which is in a plurality of pairs) have an intensity larger than that of the ultraviolet rays emitted by the other ultraviolet ray sources.

Thus, it is respectfully asserted that the cited references, taken either alone or in combination, do not teach all the claimed limitations of claim 8. Therefore, it is respectfully asserted that claim 8 is not obvious over the cited references.

C. The cited references do not teach or suggest that the wavelength of ultraviolet rays emitted from the ultraviolet ray source arranged on the most downstream side in the feeding direction of the recording medium in the plurality of pairs is set to be larger than the wavelength emitted from the other ultraviolet ray irradiating devices, as claimed in claim 15.

Regarding the limitations of claim 15 that claim in relevant part:

“wherein the ultraviolet rays emitted from the ultraviolet ray source or the ultraviolet ray sources of the ultraviolet ray irradiating device, which is **arranged on the most downstream side in the feeding direction of the recording medium, in the plurality of pairs**, has a longer wavelength or more longer wavelength components than a wavelength or longer wavelength components of the ultraviolet rays emitted from the ultraviolet ray source or the ultraviolet ray sources of the other ultraviolet ray irradiating device or each of the other ultraviolet ray irradiating devices,” **(emphasis added)**

it is respectfully not seen where the cited references teach or suggest the claimed structure quoted above.

As noted above in Part A, **radiation source 51 of Caiger is respectfully not “in the plurality of pairs.”** as claimed in claim 8. Furthermore, it is respectfully asserted that Caiger does not teach or suggest at all that ultraviolet rays emitted from radiation source 45 of Caiger (which is in a plurality of pairs) have a wavelength longer than that of the ultraviolet rays emitted by the other ultraviolet ray sources.

Thus, it is respectfully asserted that the cited references, taken either alone or in combination, do not teach all the claimed limitations of claim 8. Therefore, it is respectfully asserted that claim 15 is not obvious over the cited references.

D. The dependent claims.

As noted above, it is respectfully asserted that independent claims 1, 8, and 15 are allowable. Therefore, it is further respectfully asserted that dependent claims 2-7, 9-14, and 16-20 are also allowable.

II. Conclusion.

Reconsideration and allowance of all of the claims is respectfully requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Please contact the undersigned for any reason. Applicants seek to cooperate with the Examiner including via telephone if convenient for the Examiner.

Respectfully submitted,

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